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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/546,262	04/10/2000	Khuy V. Nguyen	2000-104	3048

29494 7590 08/26/2003

ROBERT H. HAMMER III, P.C.
3121 SPRINGBANK LANE
SUITE I
CHARLOTTE, NC 28226

EXAMINER
TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
1745	21

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-21

Office Action Summary	Application No.	Applicant(s)	
	09/546,262	NGUYEN ET AL.	
	Examiner	Art Unit	
	Susy N Tsang-Foster	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,5 and 8-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,5 and 8-12* is/are rejected.

7)☒ Claim(s) *13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the amendment filed on 6/11/2003. Claims 1-3, 6, and 7 have been cancelled. Claims 12 and 13 have been added. Claims 4, 5, and 8-10 have been amended. Claims 4, 5, and 8-13 are pending. Claim 13 is objected to. Claims 4, 5, and 8-12 are finally rejected for reasons given below.

Specification

2. The amendment filed 6/11/2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The added material "and medium molecular weight high density polyethylene is most, most preferred" on page 5 of the specification is not originally disclosed.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 4, 5, and 8-11 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 11-240970 A (machine translation obtained from JPO website).

JP 11-240970 A discloses a battery separator comprising a microporous polyolefinic membrane being made from a blend of polypropylene and (see paragraph 14 of the machine translation) a low melting matter such as polyethylene wax (an oligomer) with a molecular weight average of 100-10000 in an amount in the range of 2 to 200 weight part to 100 weight part of the polyolefin (see paragraph 17 of the machine translation). This is equivalent to 1.96 % to 66.7% by weight of the polyethylene wax in the blend which overlaps the claimed range of greater than 20 wt% of the polyethylene wax in the blend and the claimed range of 50% or less by weight of the polyethylene wax (oligomer). Besides polypropylene, the polymer can be polymethylpentene, and polybutene (see paragraph 23 of machine translation). The microporous polyolefinic membrane has a porosity ranging from 20 to 80%, an average pore size of 0.01 to 1 micron and a thickness in the range of 10 to 100 micron which overlaps with the claimed range of less than 76.2 microns (3 mils) in thickness (see paragraph 37 of machine translation).

The separator has a shutdown temperature that is less than the melting point of the polymer (see paragraphs 18-19 of machine translation).

JP 11-240970 A also discloses that the separator can be a multilayered separator by laminating the microporous polyolefinic membrane with a support such as a nonwoven fabric (see paragraph 21 of machine translation).

In specific example 1, 100 weight part of polypropylene was combined with 40 weight part of low molecular weight polyethylene was having a molecular weight of 3000 (see

paragraph 61 of machine translation) which is equivalent to 28.6% by weight of the polyethylene wax (oligomer) in the blend.

JP 11-240970 A discloses a lithium battery comprising the aforementioned separator (see paragraph 75 of machine translation).

A lithium battery comprises an anode , a cathode and a separator between the anode and cathode and electrolyte in ionic communication with the anode and cathode via the separator (see paragraph 3 of machine translation).

JP 11-240970 A also discloses a battery separator for a lithium battery comprising a microporous polyolefinic membrane having a shutdown temperature of 128 °C (see Table 1, comparison example 1), a porosity of 59%, an average pore size of 0.24 micron (see paragraphs 67 and 68 of the machine translation). The microporous polyolefinic membrane comprises a blend of high density polyethylene (HDPE) and low molecular weight polyethylene wax having a molecular weight of 3000 and the amount of HDPE in the blend is 100 weight part and the amount of polyethylene wax in the blend is 40 weight part (see paragraph 67 of machine translation) which is equivalent to 28.6% by weight of the polyethylene wax in the blend.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 12 is rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 11-240970 A (machine translation obtained from JPO website).

JP 11-240970 A discloses a battery separator comprising a microporous polyolefinic membrane being made from a blend of polypropylene and (see paragraph 14 of the machine translation) a low melting matter such as polyethylene wax (an oligomer) with a molecular weight average of 100-10000 in an amount in the range of 2 to 200 weight part to 100 weight part of the polyolefin (see paragraph 17 of the machine translation). This is equivalent to 1.96 % to 66.7% by weight of the polyethylene wax in the blend which overlaps the claimed range of greater than 20 wt% of the polyethylene wax in the blend and the claimed range of 50% or less by weight of the polyethylene wax (oligomer). Besides polypropylene, the polymer can be polymethylpentene, and polybutene (see paragraph 23 of machine translation). The microporous polyolefinic membrane has a porosity ranging from 20 to 80%, an average pore size of 0.01 to 1 micron and a thickness in the range of 10 to 100 micron which overlaps with the claimed range of less than 76.2 microns (3 mils) in thickness (see paragraph 37 of machine translation).

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Since the same polymer, oligomer, and weight ratios of the polymer and oligomer are used in the comparative example separator of JP 11-240970 A as those of applicant, the comparative example separator of JP 11-240970 A inherently has a breadth of a temperature response for shutdown of 4 to 5 °C.

The court has held that claiming of a property or characteristic which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also MPEP 2112 and 2112.01. When the Examiner has provided a sound basis for believing that the products of the applicant and the prior art are the same, the burden of proof is shifted to the applicant to prove that the product shown in the prior art does not possess the characteristics of the claimed product. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Response to Arguments

7. Applicant's arguments filed 6/11/2002 have been fully considered but they are not persuasive.

Applicant asserts that Nitto Denko (JP 11-240970 A) discloses comparative examples of a HDPE/PE wax blend that did not shutdown and that Nitto Denko defines shutdown as when the electrical resistance of the membrane exceeds 200 ohm-cm^2 and that the comparative examples never reached that value and therefore those separators did not shut down and that a skilled man would not be guided by this teaching to make the instant invention.

In response, Nitto Denko is not teaching the HDPE/PE wax blend for a separator but is disclosing a HDPE/PE wax blend for a separator with the claimed weight ratio of HDPE to PE wax. The Nitto Denko reference is used as an anticipatory reference for the instant claims.

Furthermore, the Nitto Denko reference in paragraph 57 does not define the shutdown as when the electrical resistance of the membrane exceeds 200 ohm-cm^2 as evidenced by Table 1 which shows shutdown temperatures for 5 separators that have an electrical resistance of less than 200 ohm-cm^2. The Nitto Denko reference in paragraph 57 arbitarily sets an electrical resistance of greater than 200 ohm-cm^2 for a porous membrane (in Examples 1-3) not made of high density polyethylene. Furthermore, the comparative examples 1-3 of separators made of HDPE and PE wax do have shutdown temperatures as evidenced by paragraphs 68-71 of the machine translation which states that the "measurement result of SD start temperature of this porous membrane" for comparative examples 1-3.

If the separators in the comparative examples did not have SD start temperatures, there would not be any values in Table 1 listed under the column labeled "SD After heat treatment Start temperature" for comparative examples 1-3. Moreover, paragraph 73 of the machine translation state that the SD start temperature of the porous membrane of comparative examples 1-3 was 126-130 °C. Finally, since comparative example 1 of the Nitto Denko reference uses the same HDPE polymer, same molecular weight PE wax, and same weight ratios of HDPE polymer and PE wax as disclosed by applicant's specification and claimed in the claims (with the exception of instant claim 13), the comparative example 1 separator of Nitto Denko is identical to that disclosed and claimed by applicant.

Allowable Subject Matter

8. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record, JP 11-240970 A does not disclose, teach or suggest the distinguishing feature that the high density polyethylene in combination with the polyethylene wax with the claimed weight ratios in the separator is medium molecular weight high density polyethylene.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Thursday from 9:30 AM to 8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9310 for regular communications and (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/ Susy Tsang-Foster

Susy Tsang-Foster
Primary Examiner
Art Unit 1745